

Natural Heritage &  
Endangered Species  
Program

Commonwealth of Massachusetts  
Division of Fisheries & Wildlife  
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2/1X

MASSACHUSETTS THREATENED PLANTS

ADDER'S-TONGUE FERN  
(Ophioglossum vulgatum L.)

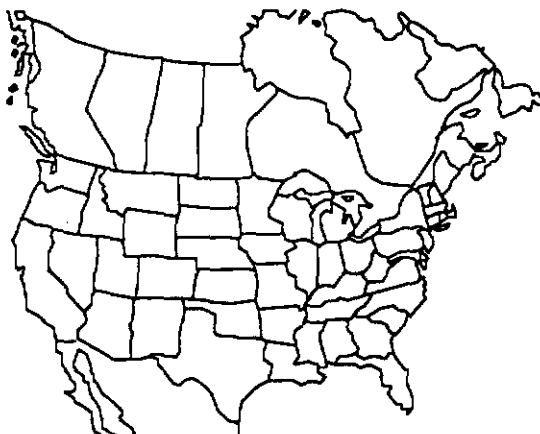
Description

Adder's-tongue is a small, terrestrial fern, up to 30 cm (12 in) high, consisting of a single fleshy green stalk (stipe) bearing a simple leaf and a fertile spike. The stipe arises from fleshy, cord-like rhizomes and roots. About midway up the stipe is the pale green leaf, approximately 15 cm (6 in), narrowly oval to oblong. In var. pseudopodium (false foot), the widespread form, the blade gradually tapers for about 1/4 to 2/3 of its length to a narrow, 1-2 cm base that continues to run down the lower stipe. There is a finely indented network of interconnecting veins. The stipe extends well beyond the leaf blade and is terminated by a short, pale green, narrow fertile spike from 1-4 cm long and up to 5 mm wide, which consists of 2 tightly packed rows of rounded sporangia (spore cases) on the margins of the spike axis. There can be a large variation in the size, shape and position of the blade, as well as the fertile spike, and the occurrence of two fronds (leaves) per rootstalk has been observed. The plant appears anytime after early June.

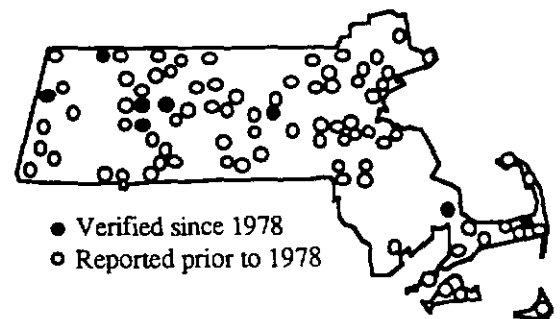
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Gleason, The New Britton & Brown Illustrated Flora of the Northeastern U.S. and Adjacent Canada New York Botanical Garden, 1952.



Range of Adder's-tongue Fern



Massachusetts Distribution by Town

### Similar Species

No other fern looks like the Adder's-tongue. Its closest relatives, the Grape Ferns (Botrychium) have dissected or lobed leaves. Several orchids and lilies may have similarly shaped fleshy basal leaves, such that non-flowering or juvenile individuals may at first glance be mistaken for Adder's-tongue Fern. However, all have parallel-veined leaves.

### Habitat in Massachusetts

Boggy meadows, acidic fens (sphagnum areas with seeping groundwater), borders of marshes, wet fields, and moist woodland clearings provide suitable open and sunny habitat for Adder's-tongue Fern. Vegetation in these habitats is varied, composed predominantly of common grasses, bulrushes (Scirpus), sedges (Carex), and broadleaved herbs including Ragged, Small Purple Fringed, and White Fringed Orchis (Platanthera lacera, psycodes, and blephariglottis), and Swamp Milkweed (Asclepias incarnata var. pulchra). No common associate or indicator species particularly point to the presence of Adder's-tongue Fern.

### Range

Adder's-tongue Fern (var. pseudopodium) is a very widespread, primarily northern fern occurring across North America from Prince Edward Island and southern Quebec to Washington; south to Virginia and west to Indiana, Nebraska, Arizona, and Mexico. A second variety (var. pycnostichum) occurs farther south to Florida and Tennessee.

### Population Status

Adder's-tongue Fern was once a widespread species in Massachusetts during the century of extensive agricultural clearing. Records prior to 1978 are from over 90 locations! At present there are only 8 known occurrences. This elusive and easily overlooked species makes it difficult to determine whether individual populations are in decline or stable. Certainly, undiscovered populations still exist in Massachusetts, but the increasing rarity of appropriate open habitat appears to be a major factor in its decline in this state as well as most of its range. It is listed as rare in 20 states: CA, CT, DE, IA, IL, KS, MA, MI, MO, MT, ND, NE, NJ, OR, RI, SC, VA, WA, WI, and WY.